

Indifference Curve

In Microeconomics, the Indifference Curve Analysis is an important analytical tool in the study of consumer behavior. The indifference curve analysis was developed by the British economist Francis Ysidro Edgeworth, Italian economist Vilfredo Pareto and others in the first part of the 20th century. J.R. Hicks & R.G.D. Allen in their research paper, 'A Reconsideration of the Theory of Value' criticized Marshallian cardinal approach of utility and propounded Indifference curve theory of consumer's demand. It is also called as Ordinal Approach.

Definition

An indifference curve is the locus of various points showing different combinations of two goods providing equal utility to the consumer.

An indifference curve is a graph showing combination of two goods that give the consumer equal satisfaction and utility. Each point on an indifference curve indicates that a consumer is indifferent between the two and all points give him the same utility.

Significance of Indifference Curve

In indifference curve approach only ordination of preferences is needed. It overcomes the weakness of Cardinal measurement as the satisfaction cannot be measured objectively.

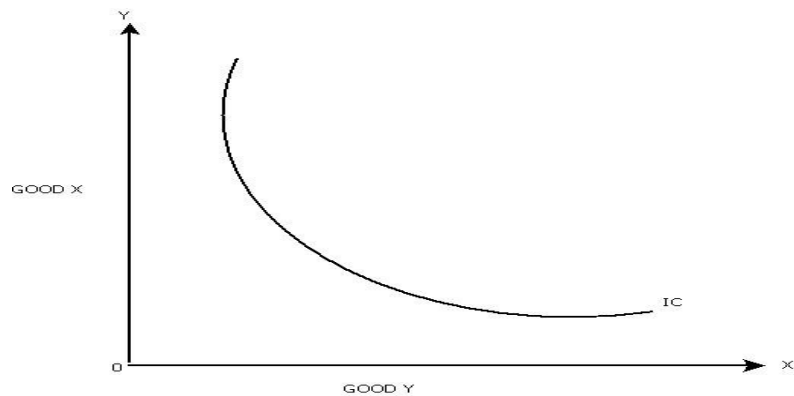
The cardinal approach provides the assumption of constant utility of money, which is unrealistic. In indifference curve approach, this assumption has been dropped.

Indifference curve approach is base for the measurement of 'consumer's surplus'. In a way it contributes to the Welfare economics.

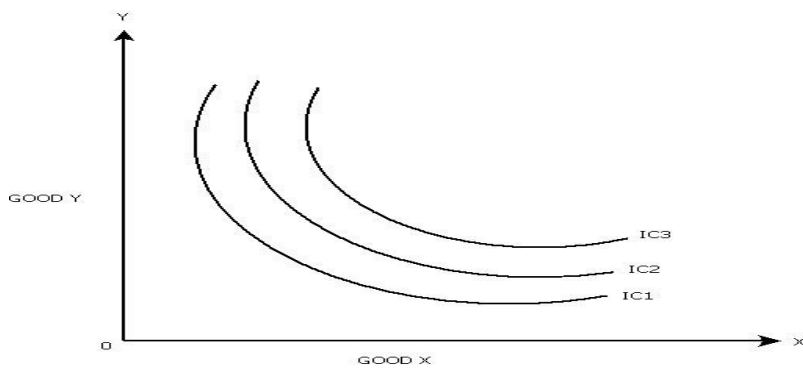
Indifference curve is a better tool to classify substitutes and complementary goods.

Properties of Indifference Curve

1. Indifference curve is always negatively sloped.

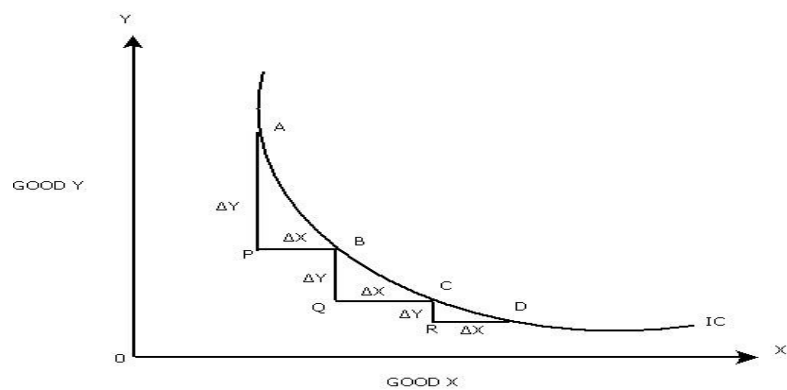


2. Higher IC shows higher level of satisfaction



In this diagram, there are three indifference curves, IC1, IC2 and IC3 which represents different levels of satisfaction. The indifference curve IC3 shows greater amount of satisfaction and it contains more of both goods than IC2 and IC1. $IC3 > IC2 > IC1$.

3. IC is convex to the origin



In the above diagram, as the consumer moves from A to B to C to D, the willingness to substitute good X for good Y diminishes. The slope of IC is negative. In the above diagram, diminishing MRS_{xy} is depicted as the consumer is giving $AF > BQ > CR$ units of Y for $PB = QC = RD$ units of X. Thus indifference curve is steeper towards the Y axis and gradual towards the X axis. It is convex to the origin.

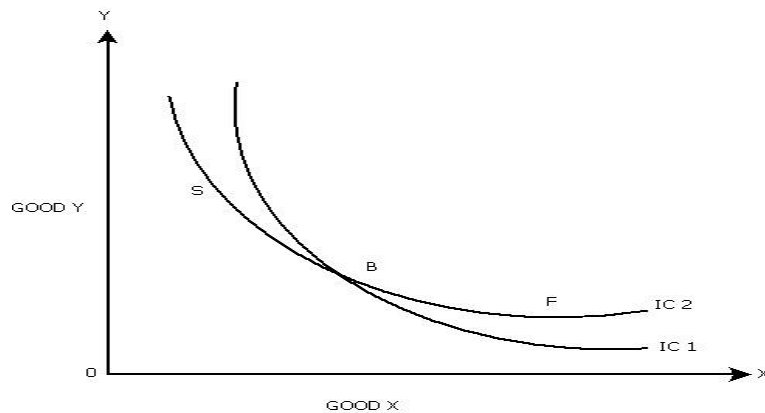
If the indifference curve is concave, MRS_{xy} increases. It violates the fundamental feature of consumer behavior.

If commodities are almost perfect substitutes then MRS_{xy} remains constant. In such cases the indifference curve is a straight line at an angle of 45 degree with either axis.

If two commodities are perfect complements, the indifference curve will have a right angle.

In reality, commodities are not perfect substitutes or perfect complements to each other. Therefore MRS_{xy} usually diminishes.

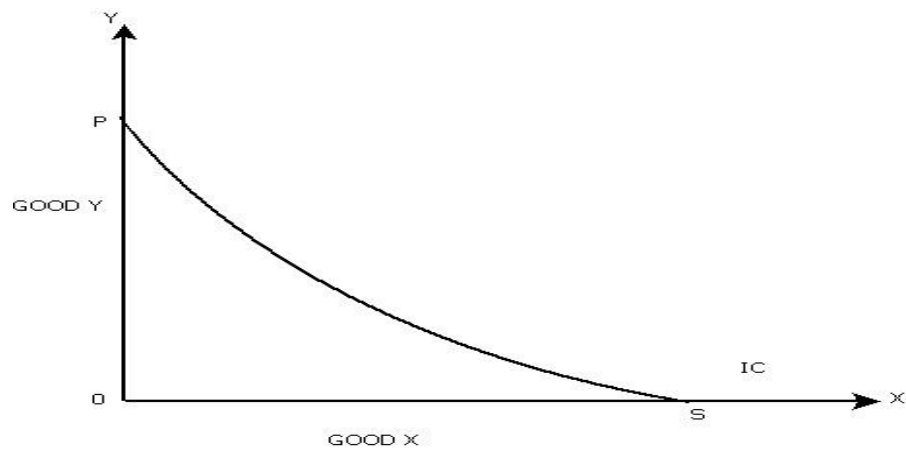
4. Indifference curve cannot intersect each other.



In the above diagram, two indifference curves are showing cutting each other at point B. The combinations represented by points B and F given equal satisfaction to the consumer because both lie on the same indifference curve IC2. Similarly the combinations shows by points B and E on indifference curve IC1 give equal satisfaction to the consumer.

If combination F is equal to combination B in terms of satisfaction and combination E is equal to combination B in satisfaction. It follows that the combination F will be equivalent to E in terms of satisfaction. This conclusion looks quite funny because combination F on IC2 contains more of good Y (wheat) than combination which gives more satisfaction to the consumer. We, therefore, conclude that indifference curves cannot cut each other.

5. Indifference curve do not touch the vertical or horizontal axis.



In the above diagram, it is shown that the indifference IC touches Y axis at point P and X axis at point S. At point P, the consumer purchases only OP commodity of Y good and no commodity of X good, similarly at point S, he buys OS quantity of X good and no amount of Y good. Such indifference curves are against our basic assumption. Our basic assumption is that the consumer buys two goods in combination.